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[Τραβήξτε την προσοχή του αναγνώστη σας με ένα ελκυστικό απόσπασμα. Συνήθως πρόκειται για μια σύντομη περίληψη του εγγράφου. Όταν είστε έτοιμοι να προσθέσετε το περιεχόμενό σας, απλώς κάντε κλικ εδώ και αρχίστε να πληκτρολογείτε.]

ECOLOGY

Περιεχόμενα

[ECOLOGY BRANCH OF BIOLOGY 1](#_Toc509886358)

[ECOLOGY NOT ENVIRONMENTALISM 2](#_Toc509886359)

[WORD ECOLOGY 3](#_Toc509886360)

[ECOLOGY HAS PRACTICAL APPLICATIONS 4](#_Toc509886361)

[THE SCOPE OF ECOLOGY 5](#_Toc509886362)

# ECOLOGY BRANCH OF BIOLOGY

Ecology (from Greek: οἶκος, "house", or "geophysical"; -λογία, "study of")[A] is the branch of biology[1] which studies the interactions among and their environment. Objects of study include interactions of organisms with each other and with dead components of their environment. Topics of interest include the biodiversity, distribution, biomass, and populations of organisms, as well as cooperation and competition within and between species. Ecosystems are dynamically coworking systems of organisms, the communities they make up, and the non-living components of their environment. Ecosystem processes, such as primary production, pedogenesis, health cycling, and niche construction, regulate the flux of energy and matter through an environment. These processes are sustained by organisms with specific life history traits. Biodiversity means the varieties of species, genes, and ecosystems, enhances certain ecosystem services.

# ECOLOGY NOT ENVIRONMENTALISM

Ecology is not synonymous with [environmentalism](https://en.wikipedia.org/wiki/Environmentalism), natural history, or [environmental science](https://en.wikipedia.org/wiki/Environmental_science). It overlaps with the closely related sciences of [evolutionary biology](https://en.wikipedia.org/wiki/Evolutionary_biology), [genetics](https://en.wikipedia.org/wiki/Genetics), and [ethology](https://en.wikipedia.org/wiki/Ethology). An important focus for ecologists is to improve the understanding of how biodiversity affects ecological function. Ecologists seek to explain:

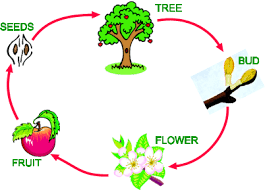
* Life processes, interactions, and [adaptations](https://en.wikipedia.org/wiki/Adaptations)
* The movement of materials and [energy](https://en.wikipedia.org/wiki/Energy) through living communities
* The [successional](https://en.wikipedia.org/wiki/Ecological_succession) development of ecosystems
* The [abundance](https://en.wikipedia.org/wiki/Abundance_(ecology)) and distribution of organisms and biodiversity in the context of the [environment](https://en.wikipedia.org/wiki/Environment_(biophysical)).

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# WORD ECOLOGY

Ecology has practical applications in [conservation biology](https://en.wikipedia.org/wiki/Conservation_biology), wetland management, [natural resource management](https://en.wikipedia.org/wiki/Natural_resource_management) ([agroecology](https://en.wikipedia.org/wiki/Agroecology), [agriculture](https://en.wikipedia.org/wiki/Agriculture), [forestry](https://en.wikipedia.org/wiki/Forestry), [agroforestry](https://en.wikipedia.org/wiki/Agroforestry), [fisheries](https://en.wikipedia.org/wiki/Fisheries)), city planning ([urban ecology](https://en.wikipedia.org/wiki/Urban_ecology)), [community health](https://en.wikipedia.org/wiki/Community_health), [economics](https://en.wikipedia.org/wiki/Ecological_economics), [basic](https://en.wikipedia.org/wiki/Basic_science) and [applied science](https://en.wikipedia.org/wiki/Applied_science), and human social interaction ([human ecology](https://en.wikipedia.org/wiki/Human_ecology)). For example, the [*Circles of Sustainability*](https://en.wikipedia.org/wiki/Circles_of_Sustainability) approach treats ecology as more than the environment 'out there'. It is not treated as separate from humans. Organisms (including humans) and [resources](https://en.wikipedia.org/wiki/Resource_(biology)) compose [ecosystems](https://en.wikipedia.org/wiki/Ecosystem) which, in turn, maintain [biophysical](https://en.wikipedia.org/wiki/Biophysics) feedback mechanisms that moderate processes acting on living ([biotic](https://en.wikipedia.org/wiki/Biotic_component)) and non-living ([abiotic](https://en.wikipedia.org/wiki/Abiotic)) components of the planet. Ecosystems sustain life-supporting functions and produce [natural capital](https://en.wikipedia.org/wiki/Natural_capital) like [biomass production](https://en.wikipedia.org/wiki/Biomass) (food, fuel, fiber, and medicine), the regulation of [climate](https://en.wikipedia.org/wiki/Climate), global [biogeochemical cycles](https://en.wikipedia.org/wiki/Biogeochemical_cycles), [water filtration](https://en.wikipedia.org/wiki/Water_filtration), [soil formation](https://en.wikipedia.org/wiki/Soil_formation), erosion control, flood protection, and many other natural features of scientific, historical, economic, or intrinsic value.

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ECOLOGY HAS PRACTICAL APPLICATIONS

The word "ecology" ("Ökologie") was coined in [1866](https://en.wikipedia.org/wiki/1866) by the German scientist [Ernst Haeckel](https://en.wikipedia.org/wiki/Ernst_Haeckel). Ecological thought is derivative of established currents in philosophy, particularly from ethics and politics.[[2]](https://en.wikipedia.org/wiki/Ecology#cite_note-LaferrièreStoett2003-2) Ancient Greek philosophers such as [Hippocrates](https://en.wikipedia.org/wiki/Hippocrates) and [Aristotle](https://en.wikipedia.org/wiki/Aristotle) laid the foundations of ecology in their studies on [natural history](https://en.wikipedia.org/wiki/Natural_history). Modern ecology became a much more rigorous [science](https://en.wikipedia.org/wiki/Natural_sciences) in the late 19th century. [Evolutionary](https://en.wikipedia.org/wiki/Evolution) concepts relating to adaptation and [natural selection](https://en.wikipedia.org/wiki/Natural_selection) became the cornerstones of modern [ecological theory](https://en.wikipedia.org/wiki/Theoretical_ecology).

# THE SCOPE OF ECOLOGY

The scope of ecology contains a wide array of interacting levels of organization spanning micro-level (e.g., [cells](https://en.wikipedia.org/wiki/Cell_(biology))) to a planetary scale (e.g., [biosphere](https://en.wikipedia.org/wiki/Earth%27s_spheres)) [phenomena](https://en.wikipedia.org/wiki/Phenomena). Ecosystems, for example, contain abiotic [resources](https://en.wikipedia.org/wiki/Resource_(biology)) and interacting life forms (i.e., individual organisms that aggregate into [populations](https://en.wikipedia.org/wiki/Population) which aggregate into distinct ecological communities). Ecosystems are dynamic, they do not always follow a linear successional path, but they are always changing, sometimes rapidly and sometimes so slowly that it can take thousands of years for ecological processes to bring about certain [successional stages](https://en.wikipedia.org/wiki/Ecological_succession) of a forest. An ecosystem's area can vary greatly, from tiny to vast. A single tree is of little consequence to the classification of a forest ecosystem, but critically relevant to organisms living in and on it.[[3]](https://en.wikipedia.org/wiki/Ecology#cite_note-Stadler98-3) Several generations of an [aphid](https://en.wikipedia.org/wiki/Aphid) population can exist over the lifespan of a single leaf. Each of those aphids, in turn, support diverse [bacterial](https://en.wikipedia.org/wiki/Bacteria) communities.[[4]](https://en.wikipedia.org/wiki/Ecology#cite_note-Humphreys97-4) The nature of connections in ecological communities cannot be explained by knowing the details of each species in isolation, because the emergent pattern is neither revealed nor predicted until the ecosystem is studied as an integrated whole.[[5]](https://en.wikipedia.org/wiki/Ecology#cite_note-Liere2012-5) Some ecological principles, however, do exhibit collective properties where the sum of the components explain the properties of the whole, such as birth rates of a population being equal to the sum of individual births over a designated time frame.[[6]](https://en.wikipedia.org/wiki/Ecology#cite_note-Odum05-6)

# Η οικογένειά μου